इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 4113-1 (2003): Laryngoscopes, Part 1: Conventional Hook-on Type Handle-Blade Fittings [MHD 13: Veterinary Hospital Planning and Surgical Instruments]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS 4113 (Part 1) : 2003
ISO 7376-1 : 1994

भारतीय मानक

लेरिंगोस्कोपिक फिटिंग

भाग 1 पारंपरिक हुक-ऑन टाईप हैंडल-ब्लेड फिटिंग

(दूसरा पुनरीक्षण)

Indian Standard

LARYNGOSCOPIC FITTINGS

PART 1 CONVENTIONAL HOOK-ON TYPE HANDLE-BLADE FITTINGS

(Second Revision)

ICS 11.040.10

© BIS 2003

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

August 2003

Price Group 4

Anaesthetic, Resuscitation and Allied Equipment Sectional Committee, MHD 13

NATIONAL FOREWORD

This Indian Standard (Part 1) (Second Revision) which is identical with ISO 7376-1:1994 'Laryngoscopic fittings — Part 1: Conventional hook-on type handle-blade fittings' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendations of the Anaesthetic, Resuscitation and Allied Equipment Sectional Committee and approval of the Medical Equipment and Hospital Planning Division Council.

Two Indian Standard specifications for laryngoscopes, namely, IS 3949:1971 'Dimensions and screw thread for lamp used in laryngoscopes' and IS 4113:1967 'Specification for laryngoscopes' were published earlier. In view of technological developments at the national and international levels, IS 4113:1967 was revised and published in two parts which were identical with ISO Standards as given below:

	Indian Standards	*International Standards*
a)	IS 4113 (Part 1):1986 Laryngoscopes : Part 1 Hook-on type handle-blade fittings (*first revision*)	ISO 7376-1:1984 Laryngoscopic fittings — Part 1: Hook-on type handle-blade fittings
b)	IS 4113 (Part 2):1986 Laryngoscopes: Part 2 Miniature electric lamps — Screw threads and sockets (*first revision*)	ISO 7376-2:1984 Laryngoscopic fittings — Part 2: Miniature electric lamps — Screw threads and sockets

Since the requirements of IS 3949:1971 were covered under Part 2 of this standard, IS 3949:1971 will be withdrawn.

The second revision of IS 4113 (Part 1) has been undertaken to incorporate the modifications effected in the second edition of ISO 7376-1 brought out in 1997.

In clinical anaesthesia and resuscitation, a variety of laryngoscopes are widely used for direct laryngoscopy. Because there is a clinical need for a variety of blade forms and sizes, they are usually manufactured as detachable blade and handle units.

There are two basic types of rigid laryngoscopes: those in which the light source in the blade with a power source in the handles, and those in which the light source is in the handle with optical fibres being used to transmit light to the blade. The former type is specified in this part of ISO 7376 and ISO 7376-2 while the latter type is specified in ISO 7376-3.

The aim of ISO 7376 is to promote ready interchangeability between blades and handles of the hook-on type made by different manufacturers. The primary objective of this part of ISO 7376 is to ensure interchangeability concerning mechanical fit and electrical contact between the hook-on type of conventional laryngoscope handles and blades. This is achieved by specifying the critical dimensions of the handle hook-on fitting, combined with the use of two test pieces that affect interchangeability with the blades and by designating the minimum performance requirements. The secondary objective is to provide test procedures and values for performance.

No attempt has been made in this part of ISO 7376 to standardize either the blade form or handle design except at the handle-blade fitting connection between the two.

Annex A form an integral part of this standard.

The text of International Standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

(Continued on third cover)

Indian Standard

LARYNGOSCOPIC FITTINGS

PART 1 CONVENTIONAL HOOK-ON TYPE HANDLE-BLADE FITTINGS

(Second Revision)

1 Scope

This part of ISO 7376 specifies critical dimensions and considerations for the junction of any blade and any handle of a hook-on type laryngoscope to allow engagement, lamp illumination and disengagement through multiple cycles. An electrical lamp in the blade is supplied with energy from the handle.

This part of ISO 7376 does not cover

a) the blade form or handle design other than the interchangeability aspects of the connection between the blade and the handle;

b) the measurement and specification of the lamp illumination intensity;

c) disposable or flexible laryngoscopes, or laryngoscopes designed for surgery;

d) laryngoscopes without a lamp in the blade.

2 Definitions

For the purposes of this part of ISO 7376, the following definitions apply.

2.1 conventional blade: Separate rigid component to provide direct vision of the larynx, incorporating a hook-on base and a lamp which has an electrical connection at the hook-on end of the blade.

2.2 contacts: Components of the fittings which come together to make an electrical circuit and thus energize the light source when the blade and handle are engaged in the operating position.

2.3 engagement: Mechanical attachment of the blade and handle so that the blade remains securely coupled to the handle in all positions.

2.4 handle: Component held in the hand of the operator during use, one end of which forms the hook-on connection for the blade.

2.5 locking mechanism: Mechanism that retains the blade in the operating position.

2.6 locking slots: Components of the handle locking surfaces that accept the locking mechanism of the blade to resist blade displacement from the operating position.

2.7 operating position: Position of the engaged blade and handle when the instrument is ready for use.

3 Performance requirements

3.1 Test method

The requirements specified in 3.4 to 3.8 shall be determined with the blade attached to test piece 1 ("GO") specified in annex A.

3.2 Hook-on blade and handle fittings

Detachable hook-on blade and handle combinations which engage shall lock and illuminate when in the operating position, and shall stay illuminated in any orientation.

3.3 Handle fittings

Dimensions and configurations not shown are at the discretion of the manufacturer but they should ensure safe operation.

3.3.1 Dimensions for handle fittings

3.3.1.1 The dimensions for handle fittings shall be in accordance with figure 1. All measurements shall be taken from datum plane A, datum plane B and the hinge-pin centreline.

3.3.1.2 The total clearance between the width of the handle hook-on fitting and the width of the blade hook-on fitting shall not exceed 0,3 mm.

3.3.2 Electrical contacts for handle fittings

The insulated central contact shall press against the central contact on the blade to maintain conductivity and ensure lamp illumination while in the operating position (see 3.9).

NOTE 1 Degradation of the electrical contacts is a common problem and it is recommended that electrical contacts are designed to resist deformation and corrosion.

3.4 Blade fittings

3.4.1 Blade hook-on fittings shall engage the handle hook-on fittings which comply with figure 1, and 3.3.1 and 3.9. Typical blade hook-on fittings are shown in figure 2.

3.4.2 The mechanical fit of the blade to the handle shall be tested by attaching the blade to test piece 1 ("GO") and test piece 2 ("NOT GO") as specified in annex A. The dimensions of the test pieces are given in table A.1 and figure A.1.

3.5 Engagement

When an engagement force between 10 N and 45 N is applied along the force axis shown in figure 3, the blade shall engage with the handle.

3.6 Blade retention

When engaged, the blade shall be retained on the handle when the handle is held in any position.

3.7 Operating position

3.7.1 Locking

When a torque between 0,35 Nm and 1,35 Nm is applied to the blade, it shall lock into the operating position (figure 4).

3.7.2 Unlocking

When a torque between 0,25 Nm and 1,35 Nm is applied to the blade, it shall unlock from the operating position (figure 4).

3.8 Disengagement

When a disengagement force between 10 N and 45 N is applied along the force axis shown in figure 3, the blade shall disengage from the handle.

3.9 Hook-on handle-blade fittings and electrical contacts.

The lamp shall light when the blade is placed into the operating position.

4 Marking and labelling

4.1 Blades and handles shall be marked with the following:

a) the name and/or trademark of the manufacturer and/or supplier, this symbol being not less than 10 mm^2;

b) the country of origin;

c) either "stainless" or "s/s", if made of stainless steel.

4.2 Blades shall be marked with the size and type, the size being expressed in numerals and the type in letters, for example

MAC 3

NOTE 2 Size and type of blades are not specified and may differ between manufacturers.

5 Information to be supplied by manufacturer

The manufacturer shall provide in or on the package in which the laryngoscope is supplied instructions for cleaning and disinfection of blades, handles and any removable components.

Dimensions in millimetres

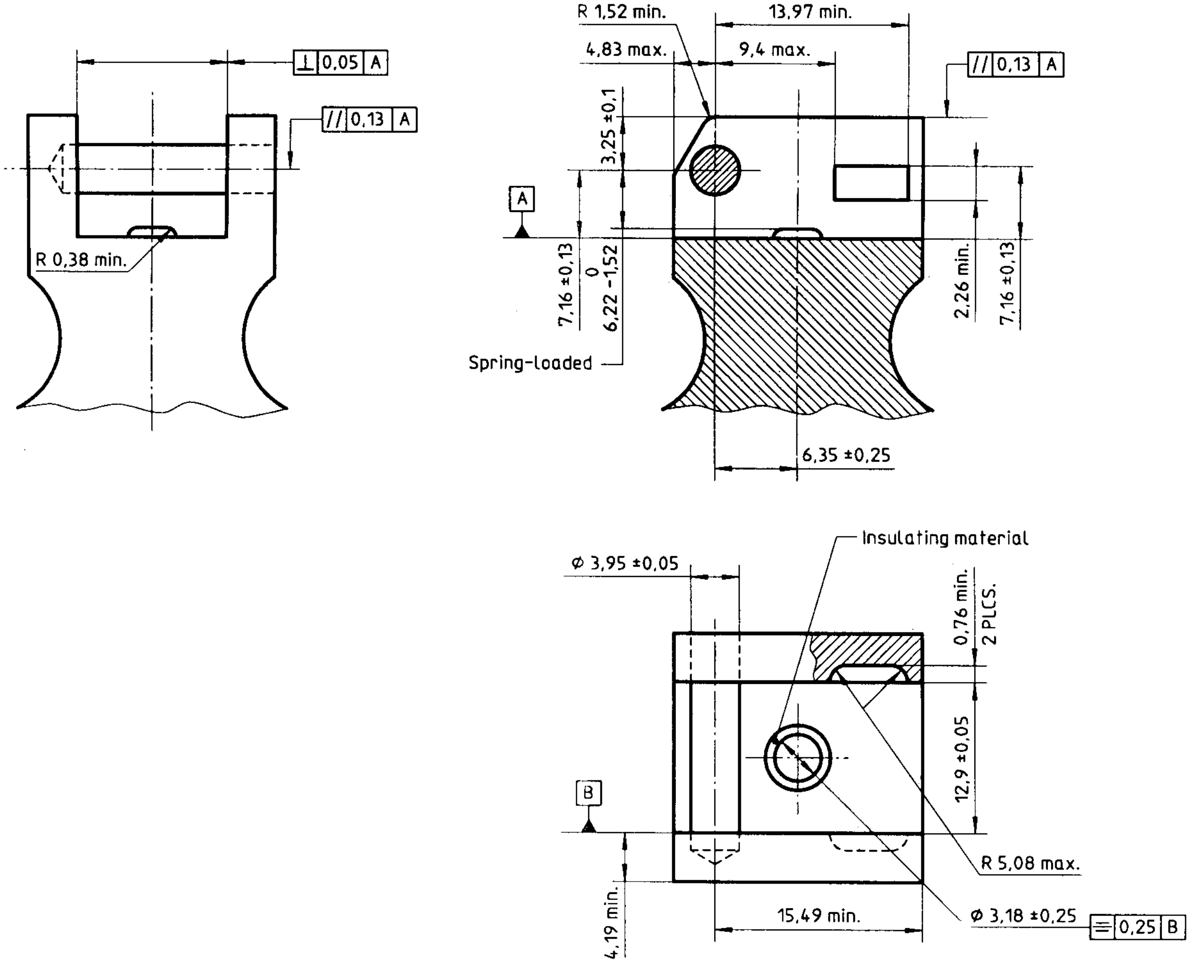

Figure 1 — Handle hook-on fitting of conventional system

Dimensions in millimetres

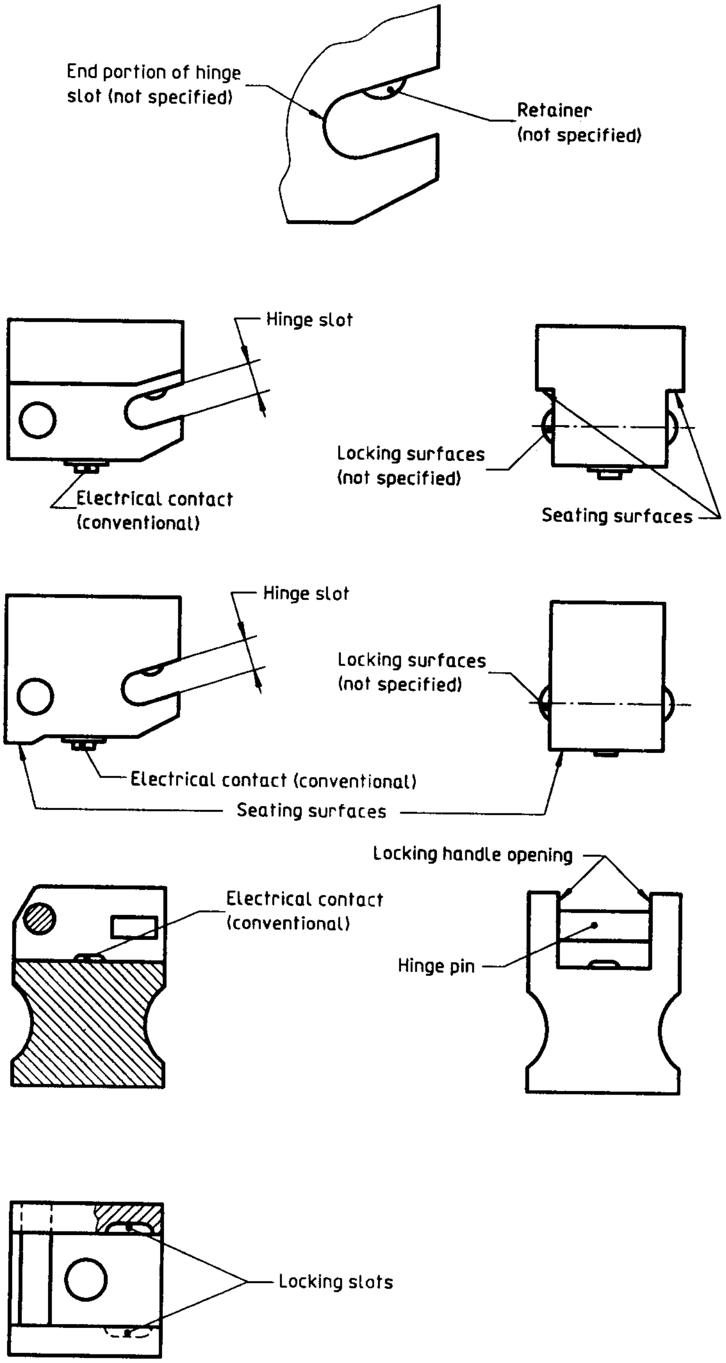
End portion of hinge slot (not specified)
Retainer (not specified)
Hinge slot
Electrical contact (conventional)
Locking surfaces (not specified)
Seating surfaces
Hinge slot
Locking surfaces (not specified)
Electrical contact (conventional)
Seating surfaces
Locking handle opening
Electrical contact (conventional)
Hinge pin
Locking slots

Figure 2 — Typical blade and handle hook-on fitting configurations of conventional system

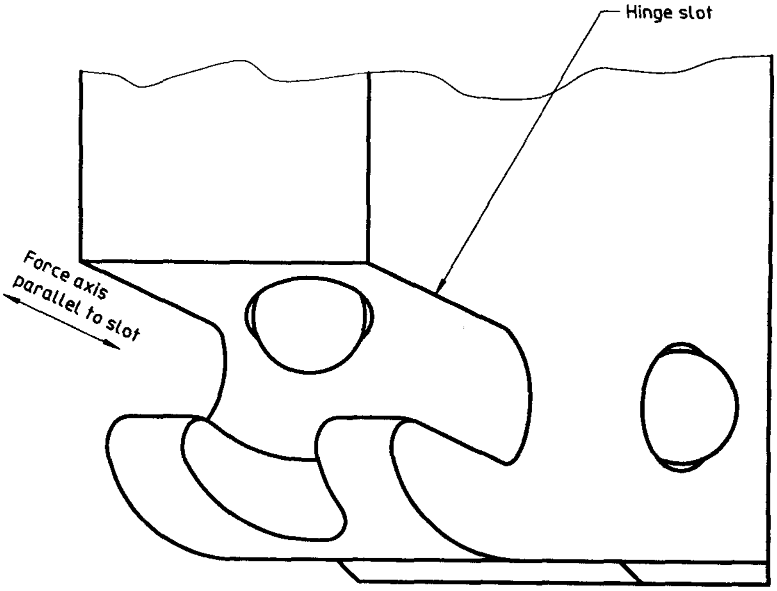

Figure 3 — Force axis for engagement/disengagement tests (see 3.5)

Dimensions in millimetres

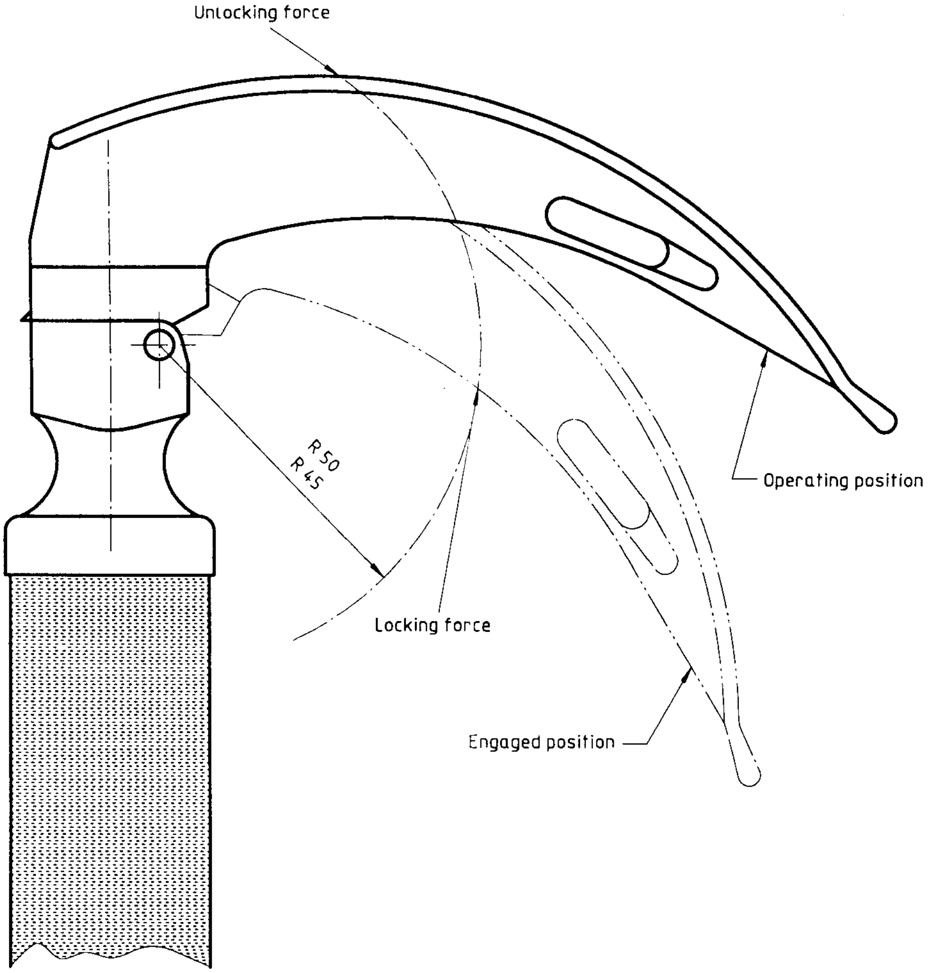

Figure 4 — Torque application for locking mechanism tests (see 3.7.1 and 3.7.2)

Annex A
(normative)

Test piece dimensions

Test pieces "1" and "2" in accordance with table A.1 and figure A.1 are used to test interchangeability with the appropriate blades (see 3.1 and 3.4.2).

Table A.1 — Dimensions for blade test pieces

Dimensions in millimetres

Dimension	Test piece "1" $^{0}_{-0,01}$	Test piece "2" $^{+0,01}_{0}$
b_1	6,60	6,10
b_2	4,83	4,43
$\varnothing d$	3,90	4,00
h_1	12,95	12,85
h_2	7,29	7,03
h_3	6,22 1)	4,50 1)
h_4	3,12	3,38
h_5	7,29	7,03

1) Spring-loaded.

NOTE — Test piece 1 is a "GO" gauge (maximum blade fitting size).

Test piece 2 is a "NOT GO" gauge (minimum blade fitting size).

Dimensions in millimetres

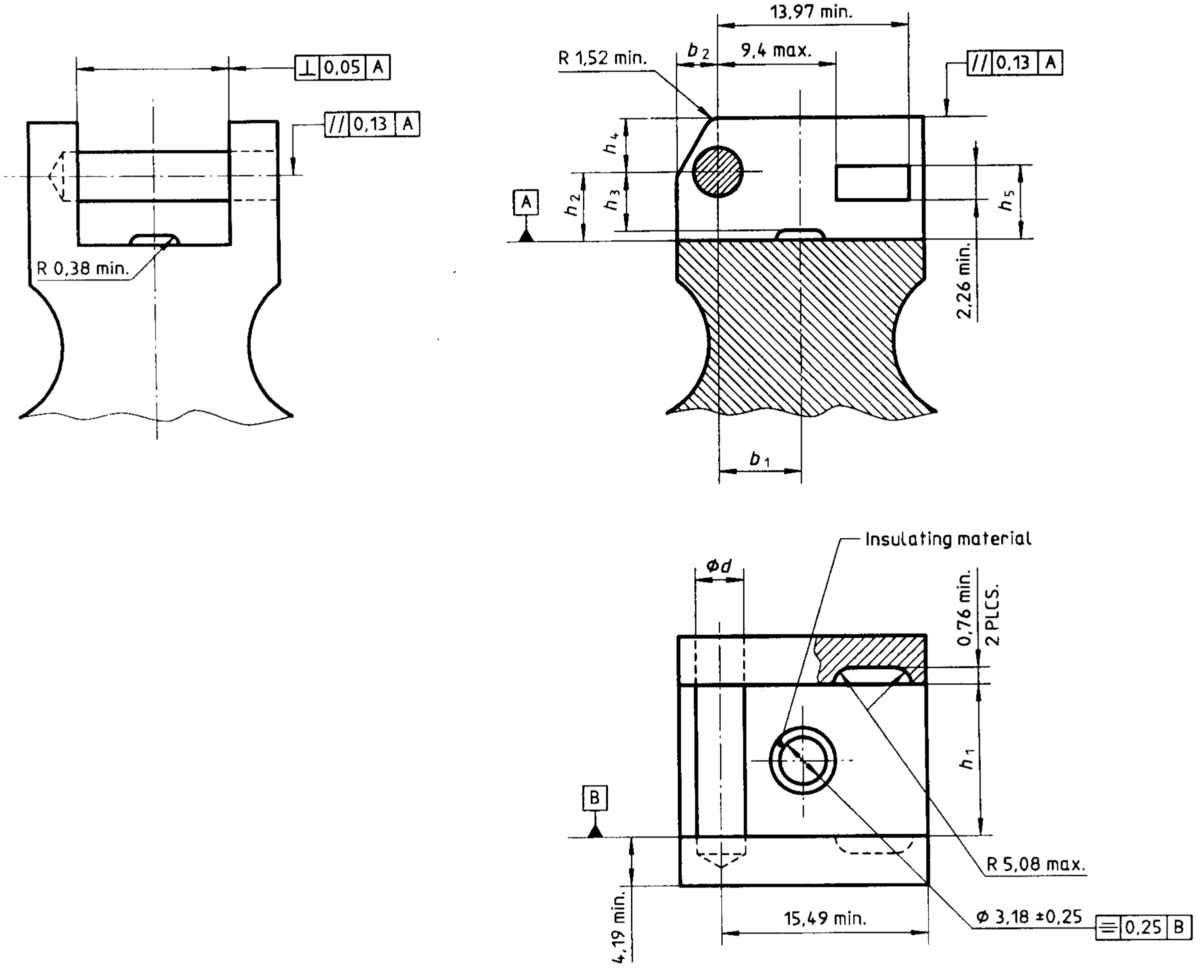

Figure A.1 — Test piece for handle hook-on fitting of conventional system

(*Continued from second cover*)

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2:1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publication), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc: No. MHD 13 (2755).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402

Telegrams: Manaksanstha
(Common to all offices)

Regional Offices:

Regional Offices	Address	Telephone
Central	Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	2323 7617 2323 3841
Eastern	1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi KOLKATA 700054	2337 8499, 2337 8561 2337 8626, 2337 9120
Northern	SCO 335-336, Sector 34-A, CHANDIGARH 160022	60 3843 60 9285
Southern	C.I.T. Campus, IV Cross Road, CHENNAI 600113	2254 1216, 2254 1442 2254 2519, 2254 2315
Western	Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	2832 9295, 2832 7858 2832 7891, 2832 7892

Branches : AHMEDABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. NALAGARH. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM. VISAKHAPATNAM.

Printed at Simco Printing Press, Delhi